Original Research Paper

Volume - 12 | Issue - 11 | November - 2022 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Pathology

PREVALENCE OF BENIGN THYROID LESIONS AMONG ALL GOITRE AT TERTIARY CARE CENTRE GWALIOR

Dr Shailendra Sharma MD Pathology

Dr Sapna Dhakad MD Pathology

ABSTRACT **Background:** Thyroid gland is a specialized endocrine organ which has various functions in our body, and it is essential for our survival and metabolic functions. Thyroid hormone has various effects in catabolism of carbohydrate and lipid with synthesis of various proteins whose final outcome is increased BMR. Fine Needle Aspiration Cytology (FNAC) is the commonly used diagnostic technique in thyroid lesions. FNAC of thyroid is the easiest, simple and economical method to assess the diagnosis. Our study is about the prevalence of benign thyroid lesion in all the goitre. **Aims and Objectives:** To study the spectrum of benign thyroid lesions among all the goitre. **Material and methods:** This is a 6 year retrospective study which was carried out in cytopathology section in Department of Pathology from January 2013 to December 2018. Total 866 patients with palpable thyroid swellings were included in the study. The smears made from the aspirate were air dried and stained with May-Grunwald-Giemsa (MGG) stain. **Result:** Benign lesions in goitre were more common in females. The average age group was found to be 35 years. Out of 866 cases most common thyroid lesion was Colloid goitre 60.97% (n=528), followed by Follicular Neoplasm 10.62% (n=92), Benign cystic lesion 9.47% (n=82) Hashimoto thyroiditis 8.54% (n=74), Malignant lesion 5.43% (n=47), Granulomatous thyroiditis 2.31% (n=20), Primary hyperplasia of thyroid 2.08% (n=18) and 0.58% (n=5) was unsatisfactory. **Conclusion:** Goitre is common in females than males. Colloid goitre is the commonest thyroid lesion. FNAC is almost an accurate technique for diagnosing thyroid lesions and probable accurate line of management.

KEYWORDS : Thyroid, Lesion, Fine needle aspiration cytology (FNAC)

INTRODUCTION

Thyroid gland is a specialized endocrine organ which has various functions in our body and it is essential for our survival and metabolic functions. Thyroid hormone has various effects in catabolism of carbohydrate and lipid with synthesis of various proteins whose final outcome is increased BMR. It is also essential for brain and neurological development in fetal and early childhood.

Incidence of palpable thyroid lesion in Indian subcontinent is around 4-7% [1] among which approx 5% are malignant in nature [2]. Most common cause of thyroid enlargement or goiter is iodine deficiency. Thyroid disorders are the most common endocrine diseases particularly in countries where iodine intake through diet is low. Thyroid gland disorders are unique in both presentation and symptoms. Most of thyroid swellings occur in between 30 to 60 years of age. Goitre can be present as hypothyroidism or hyperthyroidism and sometimes euthyroid or asymptomatic. Thyroid gland lesions are vary in the incidence in relation to the geographical area, age, sex, dietary and environmental factors.[3] There are various type of goitrous lesions seen in thyroid like diffuse nontoxic goitre (simple goitre), nodular goitre, Graves disease, thyroiditis, benign cystic lesions, solitary adenoma etc. Most of these thyroid nodules are benign, but about 5–7% are malignant in nature.

MATERIAL AND METHODS

This is a 6 year retrospective study from January 2013 to December 2018. The study sample consist of all patients of thyroid swellings irresspective of their age and sex, referred from ENT OPD, Surgery OPD and other departments for cytology. In this study we performed FNAC procedure on all palpable thyroid lesions in department of pathology at Gajra Raja Medical College. 22-25 gauge needle attached to 20 ml syringe was used for aspiration. Material was aspirated from 2 to 3 different sites in the lesion and the aspirate was smeared on clean glass slide and air dried smear. May-Grunwald-Giemsa (MGG) staining was done and using DPX MOUNTANT slides were prepared. Stained slides were examined under the microscope. Statistical analysis was done by standard methods for sensitivity, specificity and diagnostic accuracy.

RESULTS

The study was carried out in the Department of Pathology at Gajra Raja Medical College from January 2013 to December 2018. It was a retrospective study of 866 cases with thyroid swellings referred to FNAC.

In this study most common age group among the patient was 21-30 years (29.56%), followed by 31-40 years (25.87%), 41-50 years (16.97%), 51-60 years (10.97%), 11-20 years (9.01%), 61-70 years (5.78%), 71-80 years (1.04%) and least common age group was <10 years (0.8%) which is shown in table 1. Out of 866 cases the percentage of female and male cases were 82.45% (n=714) and 17.55% (n=152) respectively. Thyroid disease occurs more commonly in female than male. The average age group was found to be 35 years.

Table 1: Age wise distribution of thyroid cases

Age group in years	No. of cases	Percentage (%)
0-10 yrs	7	0.8
11-20 yrs	78	9.01
21-30 yrs	256	29.56
31-40 yrs	224	25.87
41-50 yrs	147	16.97
51-60 yrs	95	10.97
61-70 yrs	50	5.78
71-80 yrs	9	1.04

Out of 866 cases benign thyroid lesions were 83.37% (n=722) followed by Follicular neoplasm 10.62% (n=92), Malignant 5.43% (n=47) and Unsatisfactory 0.58% (n=5) respectively.

Table 2: Distribution of thyroid lesions

Thyroid lesions	Number of cases	Percentage (%)
Benign	722	83.37
Follicular neoplasm	92	10.62
Malignant	47	5.43
Unsatisfactory	5	0.58
Total	866	100

Out of 866 cases most common thyroid lesion was Colloid goitre 60.97% (n=528), followed by Follicular Neoplasm 10.62% (n=92), Benign cystic lesion 9.47% (n=82) Hashimoto thyroiditis 8.54% (n=74), Malignant lesion 5.43% (n=47), Granulomatous thyroiditis 2.31% (n=20), Primary hyperplasia of thyroid 2.08% (n=18) and 0.58% (n=5) was unsatisfactory.

Table 3: Routine cytological diagnosis of 866 cases

Routine cytological reporting	No. of cases	Percentage (%)
Colloid goitre	528	60.97
Benign cystic lesion	82	9.47
Hashimotos thyroiditis	74	8.54
Granulomatous thyroiditis	20	2.31
Primary hyperplasia of thyroid	18	2.08
Follicular neoplasm	92	10.62
Malignant	47	5.43
Unsatisfactory	5	0.58

DISCUSSION

The present study consisting of cytological study of thyroid lesions. Both benign and malignant thyroid lesions are common all over the world which vary in incidence and extent in relation to iodine deficiency and other environmental factors.[3]

Total 866 cases with thyroid lesions were studied. Out of 866 cases female to male ratio in our study was 4.7:1 which is similar to Singh P et al[4] study. In our study thyroid lesions were more commonly seen in females (82.45%) whereas in males the incidence was 17.55%, which is similar to study of Psarras et al[5] and Bhansali SK[6]. It is a well known fact that thyroid diseases affect females more commonly than males.

In the present study most of patients belongs to the age group between 20-50 years, which was also noted in the study by Bhansali SK[6] and Framingham study [7]. In present study the youngest patient was 7 year female and the oldest patient was 78 year male. The mean age of patients with thyroid lesions in our study was 35 years.

Out of 866 cases benign thyroid lesions were 83.37% (n=722) followed by Follicular neoplasm 10.62% (n=92), Malignant 5.43% (n=47) and Unsatisfactory 0.58% (n=5) respectively which were almost similar to study of Ashcraft et al [8] and Campbell et al [9]. Out of 866 cases most common thyroid lesion was Colloid goitre 60.97% (n=528), followed by Follicular Neoplasm 10.62% (n=92), Benign cystic lesion 9.47% (n=82) Hashimoto thyroiditis 8.54% (n=74), Malignant lesion 5.43% (n= 47), Granulomatous thyroiditis 2.31% (n= 20), Primary hyperplasia of thyroid 2.08% (n= 18) and 0.58% (n= 5) was unsatisfactory, Similar finding was observed in the study of Goswami D et al.[10]

CONCLUSION

Fine Needle Aspiration Cytology (FNAC) is almost an accurate technique for diagnosing thyroid lesions and probable accurate line of management. FNAC of thyroid is the easiest, simple, economical method to assess the diagnosis. FNAC has minimal invasion, high accuracy, high sensitivity and specificity so it is widely accepted diagnostic method in thyroid lesion. Clinical and radiological findings should be assessed in conjunction with the results of thyroid cytology before making a final diagnosis.

In this study we found that benign thyroid lesions are common in women than men because of probable illiteracy and the economic status and most of them occurring in an age group of 21-50 years. Colloid goitre is the most common benign thyroid lesion, it may be because of iodine deficiency in this region.

REFERENCES

1. Bamanikar S, Soraisham P, Jadhav S, Kumar H, Jadhav P, Bamanikar A. Cytohistology and clinical correlation of Thyroid gland lesions. Journal of Clinical Cancer Investigation. 2014 May-Jun; 3(3):208–12.
2. Sclabas GM, Staerkel GA, Shapiro SE, Fornage BD, Sherman SL, Vassillopoulou-Sellin R, Lee JE, Evans DB. Fine Needle Aspiration thyroid and correlation with histopathology in a contemporary series of 240 patients. Am J Surg. 2003;186:702–710.
3. Prabha V, Bhuvaneswari MG. A Study of Histopathological Spectrum of Thyroid Lesions.Int J Sci Study. 2019;7(1):1-4.
4. Singh P, Chopra R, Calton N, Kapoor R. Diagnostic Accuracy of Fine Needle Aspiration Cytology of Thyroid lesions. Journal of Cytology 2000;17(3):135-9.
5. Psarras A, Papadopoulos SN, Livadas D, Pharmakiotis AD, Koutras DA. The single thyroid nodule. BJS. 1972;59:545-548.
6. Bhansali SK. Solitary nodule in thyroid gland. Indian J Surg. 1982;55:547.
7. Vander JB, Gaston EA, Dawber TR. The significance of non toxic, thyroid nodules, Final Report of a 15 year study on incidence of Thyroid Malignancy. Ann Int Med. 1968;69:537-40.
8. Ashcraft MW, Van Hurle AJ. Management of Thyroid Nodules- Iodine scanning techniques, thyroid suppressive therapy and fine needle aspiration. Head Neck Surg. 1981;3:297-322.
9. Campbell JP, Pilisbury HC. Management of the thyroid nodule. Head Neck Surg. 1989;11:414-25.
10. Goswami D, Agrawal P, Shinde P. Accuracy of fine needle aspiration Cytology (FNAC) in comparison to Histopathological examination for the diagnosis of thyroid swellings, International Journal of Medical Science and Public Health 2017; 6(1): 6-11.